Eur J Pediatr (1998) 157: 438–440

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Early nasal CPAP reduces the need for intubation in VLBW infants

Received: 16 June 1997
Accepted: 26 August 1997

Sir: I would like to disagree strongly with the conclusions reached by the authors of this paper, namely that early nasal CPAP is good for VLBW infants. The data, for a start, are not part of an adequate control trial. Sequential studies of this nature can never be an acceptable way of evaluating advances in neonatal therapy. This is highlighted in this case by the fact that there was a marked increase in the two time periods in the use of antenatal steroids, from 49.1% in 1990, to 70% in 1993. Since antenatal steroids in babies of this birthweight and gestation are likely to result in something like a 50% decrease in the incidence and severity of respiratory distress syndrome, this change in their local practice on its own would be sufficient to result in the improved outcome.

For a topic that is a matter of considerable controversy at present in European neonatology, I believe it is unfortunate when papers are published which are not adequately designed to answer the relevant questions.

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Reply

Received: 16 June 1997
Accepted: 26 August 1997

Sir: As indicated in our paper we controlled for the confounding effects of several variables with multiple logistic regression analysis which demonstrated that not antenatal lung maturation but rather nasal CPAP treatment was the predominating cause for the lower intubation rate in the CPAP group. Table 1 below shows the proportion of intubated infants with and without antenatal lung maturation in the two study groups, respectively. It provides the data to perform a Cochran's test [1] which also shows that the significant decrease in intubation rate following early nasal CPAP treatment persists when prenatal lung maturation is taken into account.

With respect to frequency and severity of respiratory distress, the two groups in our study did not differ significantly (signs and symptoms of respiratory distress prompting treatment were present in 77.2% vs. 78.6% in two groups). We fully agree with Dr. Roberton that randomized controlled trials would provide the strongest evidence for or against the benefit of early nasal CPAP in VLBW infants, as was stated in the very last sentence of our paper.

Reference

1. Armitage P, Berry G (1994) Statistical methods in medical research, 3rd edn. Blackwell, Oxford, pp 417–419

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Table 1. Confounding effect of prenatal lung maturation on intubation rate

Prenatal lung maturation	1990 (Control-group)		1993 (NCPAP-group)		p-value[a] (Cochran's test)
	Intubated infants/subgroup	(%)	Intubated infants/subgroup	(%)	
Yes	14/28	(50)	12/49	(24)	$0.018 < P < 0.025$
No	16/29	(55)	9/21	(43)	

[a] The mean difference of proportion of intubated infants between the two study groups weighted for prenatal lung maturation is 20.15%